

REMARKS

Status of the Claims

Claims 1–21 and 24–27 are pending. No claims have been withdrawn from consideration.

Claim 1 was amended to recite each of the first and second magnetic means comprises a magnet or electromagnet and an actuator for moving the magnet or electromagnet. This is supported, for example, by an embodiment of the first magnetic means 13 which includes the magnetic element 14 and the first linear actuator 15 which moves the magnet. Also, for example, an embodiment of the second magnetic means 21 includes second magnetic element 22 and the second linear actuator 23.

Also, claims 1, 2, 3 and 22 are combined with the additional changes that:

the movement of the first magnetic element rather than first magnetic means is recited,

the movement of the first magnetic means substantially orthogonal to the plane upon which the bundle of bars lies is further described as substantially vertical, as supported by Fig. 2, and

the movement of the second magnetic element rather than second magnetic means is recited.

Method claims 18 and 23 are combined. Also, claim 18 was amended with amendments similar to those made to device claim 1.

Applicant submits these additional details of the first and second magnetic means are also consistent with the present application labeled embodiments illustrated in the drawings as first magnetic means 13, 113 and second magnetic means 21, 121. This is discussed at page 11, lines 23–24; page 14, line 21; and page 15, line 19 and elsewhere in the application.

For example, the application, page 9, lines 13–17, discloses:

"... the feeder device 10...comprises first magnetic means 13 consisting of a first magnetic or electromagnetic element 14 arranged ...during use in proximity with one end of the bars 11 of the bundle".

Page 10, lines 3–8, discloses:

"... the magnetic element 14 is lowered towards the bundle 12, by means of the first linear actuator 15, to take the lower face thereof, comprising the attractive surface, to a position such as to exert an effect of magnetic attraction on the ends of the bars 11...".

Page 11, lines 2-4, discloses:

"second magnetic element 21 are activated, which comprise a second magnetic element 22 mounted at the end of a second linear actuator 23.."

Page 11, lines 11-17, discloses: "... so as to move, in this case horizontally, the second magnetic element 22 from a first advanced pick-up position (fig. 4; fig. 9), wherein it moves in cooperation with the attractive surface of the first magnetic element 14 in order to pick up one or more bars from it, advantageously one bar at a time, to a second retracted release position ...".

The drawings (for example figures 1 to 5), show the bars 11 are first attached to the magnetic element 14 and then, one at a time, to the magnetic element 22 (figures 4 and 5) by virtue of magnetic attraction.

As recited by claim 1 the first magnetic means is not only for separating from the bundle at least an end segment of a plurality of bars but also for arranging at least the end segments of the plurality of bars on a plane distanced with respect to said bundle. In view of this it is submitted the first magnetic means includes its magnetic element (permanent magnet or electromagnet) and the support which moves the magnetic element. For example, as mentioned above the first magnetic means 13 includes the magnetic element 14 and the first linear actuator 15 which moves the magnet.

As recited by claim 1 the second magnetic means is not only for picking up, from said first magnetic means, at least one bar at a time from said plurality of bars but also to unload said at least one bar in a desired release position. In view of this it is submitted the second magnetic means includes its magnetic element (permanent magnet or electromagnet) and the support which moves the magnetic element. For example, as mentioned above the second magnetic means 21 includes second magnetic element 22 and the second linear actuator 23.

Claim 2 is amended to define a Markush group of first actuators and a Markush group of second actuators. One of the Markush group first actuators is supported by the first linear actuator (15, Fig. 1). Another of the Markush group first actuators is

supported by the first linear actuator (115, Fig. 8) attached to a first end of first shaped arm (31, Fig. 8) and by the first linear actuator (215, Fig. 8) attached to a first end of the curved arm (31, Fig. 9). The Markush group of second actuators is supported by the second linear actuator (23) and the rotary arm (123) for moving in the second operating direction curved

Claim 2 also recites the substantially vertical movement of the first direction includes any of vertical movement as, for example, shown in Figs 1-5, as well as curved or slanted movement with a substantial vertical component. This follows from the disclosure of the application at page 6, lines 11 stating "... the first magnetic means are moved in a curved or slanted direction with respect to the plane on which the bars lie...". In other words, the direction of movement of the first magnetic means, when it raises the bars from the underlying plane, may be vertical (for example, Figures 1-5), curved (for example, Figure 8) or slanted (angled) with respect to the laying plane. Thus, the first magnetic means raises the bars from the plane where they lie to make them available to be picked up by the second magnetic means.

Claim 3 recites a vertical direction of movement for the first magnetic means and horizontal direction of movement for the second magnetic means as shown, for example, by Figures 1-5.

Applicant thanks the Examiner for indicating claims 6 and 9 would be allowable if rewritten in independent form. New claim 26 is claim 6 in independent form. New claim 27 is claim 9 in independent form.

Claim Rejections

- I. The Office action rejects claims 1 – 3, 11 – 19, and 21-25, citing 35 U.S.C. §103(a) US 2003/10202873 to Miglioranza (hereinafter, “Miglioranza”), US 4,648,770 to Berz et al. (hereinafter, “Berz”), and US 5,345,806 to Sartorio et al. (hereinafter, “Sartorio”)

Miglioranza discloses a first magnetic means 8 to pick-up from a bundle a given number of bars (figs. 13 and 14). These bars are then released one by one on an Archimedes screw 17 to be separated from each other and then discharged in an operating position. The Office action characterizes the Archimedes screw 17 as "second means 17".

The Office action also asserts Berz discloses a second magnetic means 25 which picks up the bars from a first magnetic means 11a. Thus, the Office action concludes it would have been obvious to modify the apparatus of Miglioranza to include first and second magnetic means working together to transfer parts therebetween.

Also, the Office action asserts Sartorio discloses a second means 50 able to pick up from a first means 60 (Fig. 4) an article for loading into a machine. (Applicant notes neither means is magnetic). Thus, the Office action concludes it would have been obvious to modify the apparatus of Miglioranza to include a second means which picks up from a first means, per Sartorio, which "allows the maximum use to be made of the productive capacity."

Also, the Office action concludes it would have been obvious to modify Berz in view of the combination of Miglioranza and Sartorio where the predictable result of automatic transfer between articles is achieved. This rejection is respectfully traversed.

A. Arms 11a of Berz is not a magnetic means

The Office action asserts Berz element 11a is a first magnetic means. As part of interpreting whether arms 11a of Berz constitute magnetic means, the Office action at page 4 seeks identification of what constitutes a first magnetic means and a second magnetic means of the present claims. Accordingly Claims 1 and 18 are amended.

As explained above the claims recite the magnetic means comprise a magnetic element with an attractive surface for the metallic bars and an actuator to move the magnetic element towards and away from the bars, according to the steps of the pick-up and release cycle. Moreover, dependent claims 2, 3 and 11-15 further specify structural features of the magnetic means.

In contrast, arms 11a of Berz neither include a magnet nor move a magnet. Thus, they are not magnetic means. In Berz the magnets are 7, 25 and 26. Arms 11a are "arms 11a" of transfer cart 11 (Berz, col. 4, lines 62-67). Arms 11a mesh through magnets to move profiles, but they are not themselves magnets. Arms 11a lift the two groups of profiles Ia and IIa off the conveyor and position them above transfer frame 27 (Berz, col. 5, lines 29-30). The arms 11a drop down through the magnet 26 (Berz, col. 5, line 35). Berz does not indicate the arms 11a of the transfer cart 11 have magnetic properties.

B. The combination of references is improper

The Office action concludes it would have been obvious to modify the apparatus of Miglioranza to include first and second magnetic means working together to transfer parts therebetween because Berz has two magnetic means working together.

As mentioned above arms 11a of Berz are not magnetic means.

The Berz turning magnet 7 picks up two groups of profiles I and II, moves 180 degrees according to arrow R1 to position these two groups of profiles I and II above the upturned magnet 25. The magnet 7 is deenergized and magnet 25 simultaneously energized to receive the profiles (Berz, col. 5, lines 16-24).

In contrast, Miglioranza requires what the Office action asserts is a first magnetic means (including a pair of side by side magnets 8, Figs. 2, 14) to move vertically downwardly to grab bars 2 and then move vertically upwardly to a height sufficient for offloading the bars 2. Thus, the bars are on the underside of magnets 8 (see Fig. 14, one magnet shown). The "second (non-magnetic) means" has to be under the bars to receive the bars from the first magnetic means.

Miglioranza then requires the "second (non-magnetic) means" (Archimedes screw feeder 17) to laterally move the bars and work in cooperation with means 20 for counting the bars (Miglioranza, para. [0035]). This is done because, "The aim of the present invention is to solve the above cited problem [discussed in the Background of the Invention] by providing a method that allows to separate the correct number of metal profiles in bar form from the bundle to which they belong" The Archimedes screw feeder 17 can cooperate with the counting means 20 (Fig. 15) because it moves the bars laterally before discharging them. The magnets 25, 26 supported on rotating support 27 of Berz do not permit operation with counting means 20. Once the profiles are on the magnets 25, 26 they must all be discharged. There is no mechanism for selective discharge of desired bars and return of excess bars. Thus, the combination renders Miglioranza inoperative for its intended purpose.

Moreover, at the time the present invention was made a person having ordinary skill in the art would have found it illogical to substitute the Archimedes screw in Miglioranza with the arms 11a of Berz. Berz is directed to a method for stacking profile elements in nested groups. Arms 11a lift elements from a plane and discharge the

elements all together on another plane. For example, column 4, lines 62 – 67 of Berz explains a transfer cart 11 has arms 11a that can mesh through the magnets 7, 25 and 26 and move between a lower position immediately underneath the pickup station defined by the stops 4 and 5 to an illustrated upper position lying above the transfer station formed by the upturned surface of magnet 25 in Fig. 1.

The reference to FIG. 4 of Sartorio on page 3 of the Office action is a typographical error. The Office action probably intended to refer to FIG. 3.

As mentioned above, the Office action asserts Sartorio discloses a second means 50 able to pick up from a first means 60 (Fig. 4) an article for loading into a machine. (Applicant notes this alleged first means 60 is a chute 60). Thus, it would have been obvious to modify the apparatus of Miglioranza to include a second means which picks up from a first means, per Sartorio, which "allows the maximum use to be made of the productive capacity."

Applicant respectfully submits Sartorio is irrelevant and does not make up for the deficiencies of the combination of Miglioranza and Berz. Sartorio discloses a manipulator comprising gripping elements (numbered, *inter alia*, 50; which the Office action alleges as "second means") and a chute 60 (which the Office action alleges as "first means"). The gripping elements 50 and 52 of Sartorio are each constituted of jaws 54, 56 aligned with each other and intended to grip a marginal zone of a sheet metal piece P (Sartorio col. 2, line 66-col. 3, line 1). No magnetic elements are mentioned. The broad assertion that Sartorio makes it obvious for a second means to pick up from a first means does not teach how to do this goal with magnetic means.

Moreover, the gripping elements of Sartorio would not work to remove bars from the underside of the magnets 8 of Miglioranza. Thus, the combination is inoperative.

Claims 2 and 3 (now incorporated in claim 1) as well as claims 22-25 emphasize directions of movement of the first and second magnetic means to further distinguish over the references. Berz does not disclose these combinations of directions. Thus, a combination of Miglioranza, Berz and Sartorino cannot teach or suggest these directions being achieved by magnetic means.

Thus, applicants request reconsideration and withdrawal of the rejection.

II. The Office action rejects claims 4 – 5 and 7 – 8, citing 35 U.S.C. §103(a), Miglioranza, Berz, Sartorio, and US 5,387,072 to Gepfert et al. ("Gepfert")

Gepfert is cited only with respect to features of dependent claims 4 – 5 and 7 – 8 and does not compensate for the shortcomings of the combination of Miglioranza, Berz, and Sartorio. The rejection should, therefore, be withdrawn for the same reasons discussed with respect to rejection I.

III. The Office action rejects claims 10 and 20, citing 35 U.S.C. §103(a), Miglioranza Berz, Sartorio, and US 4,732,066 to Del Fabro et al. (hereinafter, "Del Fabro")

Del Fabro is cited only with respect to features of dependent claims 4 – 5 and 7 – 8 and does not compensate for the shortcomings of the combination of Miglioranza, Berz, and Sartorio. The rejection should, therefore, be withdrawn for the same reasons discussed with respect to rejection I.

Fee Authorization

The Director is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account 14-1437. Please credit any excess fees to such account.

Conclusion

The present application is in condition for allowance, and applicants respectfully request favorable action. To facilitate the resolution of any questions, the Examiner is welcome to contact the undersigned by phone.

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